

# Work Order ID 148834

Monday, July 11, 2016 10:02:57 AM

**\*148834\***

Page 1

Item ID: D4965-7 Accept **\*N900040100\*** Setup Start **\*NS1\***  
 Revision ID: Stop **\*NS2\***  
 Item Name: Step Spacer  
 Start Date: 7/11/2016 Start Qty: 10.00 **\*10\*** Cust Item ID:  
 Required Date: 7/15/2016 Req'd Qty: 10.00 **\*10\*** Customer:  
 Reference:

Approvals: Process Plan: DAS 21 Date: JUL 11 2016 Tooling: \_\_\_\_\_ Date: \_\_\_\_\_  
 QC: 9-89 Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_  
 Run Start **\*NR1\***  
 Stop **\*NR2\***

| Sequence ID/<br>Work Center ID | Operation<br>Description | Set Up/<br>Run Hours | Tool ID | Tool # | Plan<br>Code | Accept<br>Qty | Reject<br>Qty | Reject<br>Number | Insp.<br>Stamp |
|--------------------------------|--------------------------|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------|
|--------------------------------|--------------------------|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------|

| Draw Nbr | Revision Nbr |
|----------|--------------|
| D4965    | A            |

100 0.00

**\*100\*** FLOW WATER JET 10

Waterjet Memo 0.13

FLOW CNC Waterjet 1-Cut as per Dwg Dwg Rev: A

Prog Rev: A

2-Deburr as required

110 0.00

**\*110\*** QC2- Inspect parts off machine FAI/FAIB 10

QC Memo 0.02

Quality Control

PR 006/07/14

10

10 PR 006/07/14

DAS 38 9-89

JHJ



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**Reference:**

**Stop** **\*NR2\***

## Hand Finishing

## Quality Control

## Packaging

LOCATION : GA

**DAS**  
**38**  
**9-89**

JUL 21 2016

D4  
9-89

**Work Order ID 148834**

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**\*148834\***

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Item ID: D4965-7 Accept **\*N900040100\*** Setup Start **\*NS1\***  
Revision ID: Stop **\*NS2\***  
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Start Date: 7/11/2016 Start Qty: 10.00 **\*10\*** Cust Item ID:  
Required Date: 7/15/2016 Req'd Qty: 10.00 **\*10\*** Customer:  
Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_ Run Start **\*NR1\***  
QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_ Stop **\*NR2\***

| Sequence ID/<br>Work Center ID | Operation<br>Description                    | Set Up/<br>Run Hours | Tool ID | Tool # | Plan<br>Code | Accept<br>Qty | Reject<br>Qty     | Reject<br>Number | Insp.<br>Stamp |
|--------------------------------|---------------------------------------------|----------------------|---------|--------|--------------|---------------|-------------------|------------------|----------------|
| 190                            | QC21- Final Inspection - Work Order Release | 0.00                 |         |        |              |               |                   |                  |                |
| <b>*190*</b>                   |                                             |                      |         |        |              |               |                   |                  |                |
| QC                             | Memo                                        | 0.17                 |         |        |              |               |                   |                  |                |
| Quality Control                |                                             |                      |         |        |              |               |                   |                  |                |
|                                |                                             |                      |         |        |              |               | DAS<br>21<br>9-89 |                  | JUL 22 2016    |
|                                |                                             |                      |         |        |              |               | DAS<br>21<br>9-89 |                  | JUL 22 2016    |

# Picklist Print

Monday, July 11, 2016 10:03:02 AM

Work Order ID: 148834

**\*148834\***

Parent Item: D4965-7

**\*D4965-7\***

Parent Item Name: Step Spacer

Start Date: 7/11/2016

Required Date: 7/15/2016

Start Qty: 10.00

Required Qty: 10.00

Comments: IPP REV:A 13.11.05 NEW ISSUE DD VERF:JFS

| Component Item ID/<br>Item Name | Replacement<br>Item ID | Mfg/<br>Purch | Bin<br>Item | Primary<br>Location | Last<br>Location | Route<br>Seq ID | Unit of<br>Measure | Qty on<br>Hand | Qty per Kit | Total<br>Qty | Qty<br>Issued | Date<br>Issued | Status |
|---------------------------------|------------------------|---------------|-------------|---------------------|------------------|-----------------|--------------------|----------------|-------------|--------------|---------------|----------------|--------|
| M2024T3S.040                    |                        | Purchased     | No          |                     |                  |                 | sf                 | 128.4000       |             | 0.968421     |               |                |        |
| <b>*M2024T3S 040*</b>           |                        |               |             |                     |                  |                 |                    |                | <b>**</b>   |              |               |                |        |
| 2024-T3 .040 sheet              |                        |               |             |                     |                  |                 |                    |                |             |              |               |                |        |

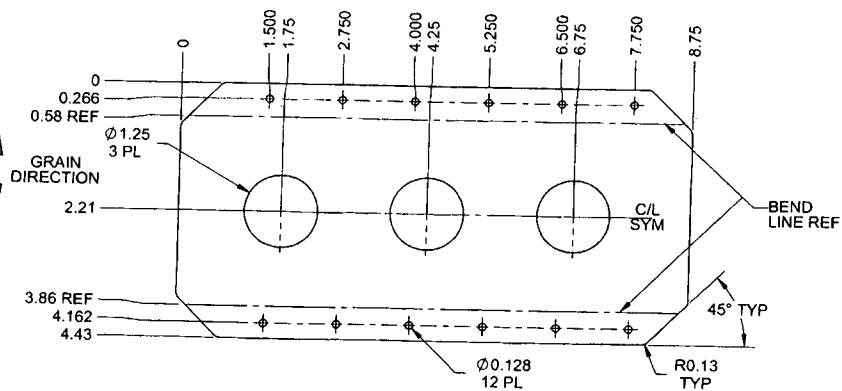
*PR 2016/07/14*

| <u>Location</u> | <u>Loc Qty</u> | <u>Loc Code</u> |
|-----------------|----------------|-----------------|
| MAT022          | 128.4          |                 |
| m134532         | 31.7           |                 |
| m134774         | 0.7            |                 |
| m135032         | 96             |                 |

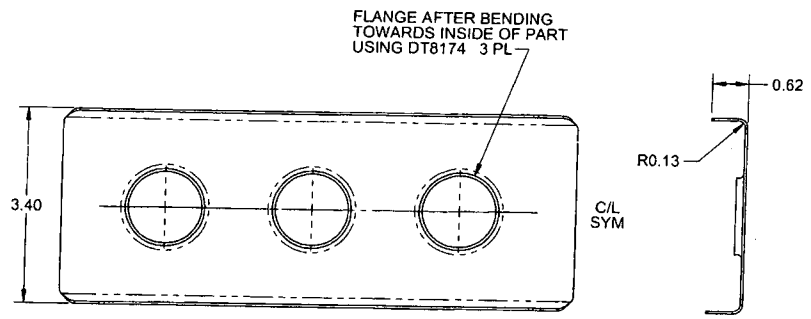
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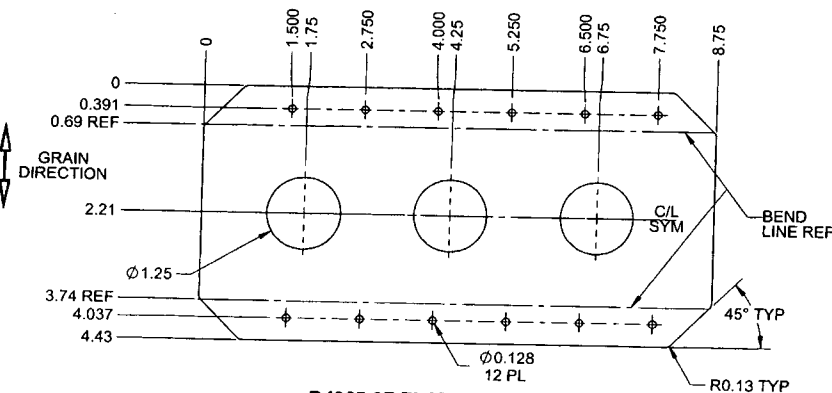
8 7 6 5 4 3 2 1



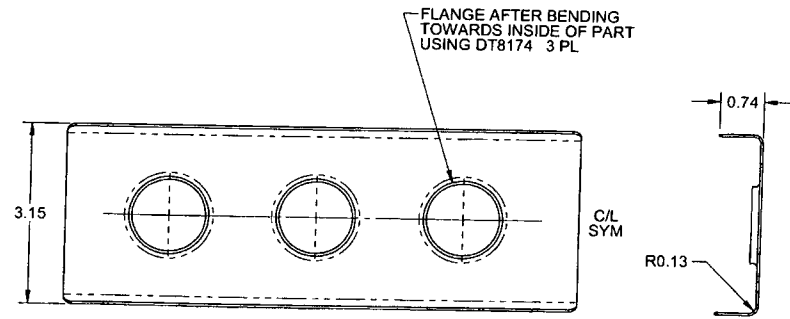
**D4965-1F FLAT PATTERN**



**D4965-1 STEP SPACER**



**D4965-3F FLAT PATTERN**



**D4965-3 STEP SPACER**

- NOTES:
- 1) MATERIAL: D4965-1: MAKE FROM D4965-1F  
D4965-3: MAKE FROM D4965-3F  
D4965-1F/-3F: 2024-T3 ALUMINIUM SHEET 0.040" THICK  
PER QQ-A-250/4 OR AMS-QQ-A-250/4 OR AMS 4037 OR ASTM B209  
(REF DART SPEC M2024T3S.040)
  - 2) FINISH: D4965-1/-3: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
  - 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
  - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
  - 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
  - 6) IDENTIFICATION: NONE
  - 7) WEIGHT: D4965-1/-3: 0.14 lbs
  - 8) ALL NON DIMENSIONED FEATURES CONTROLLED BY CAD FILE "D4965-1F\_REV A.DXF" AND "D4965-3F\_REV A.DXF"

STRICTLY  
RETURN TO  
ENGINEERING  
UNCONTROLLED COPY  
SUBJECT TO AMENDMENT  
WITHOUT NOTICE  
WORK ORDER  
NO. 148834 MLS  
160711

APPROVED

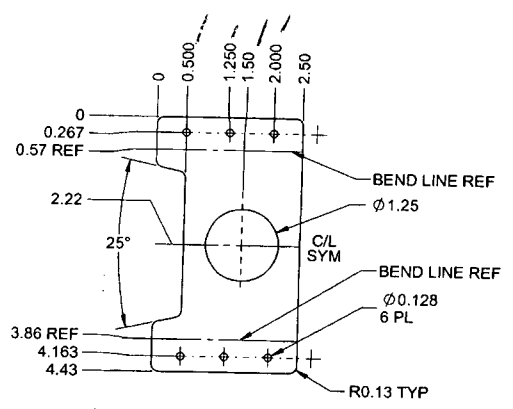
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|-------------|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| A NEW ISSUE |             | DB                                                                                                                                                                                                                                                                  | 13.10.24     |
| REV.        | DESCRIPTION |                                                                                                                                                                                                                                                                     | BY DATE      |
| DESIGN      | DB          | DART AEROSPACE LTD<br>HAWKESBURY, ONTARIO, CANADA                                                                                                                                                                                                                   |              |
| DRAWN       | DB          |                                                                                                                                                                                                                                                                     |              |
| CHECKED     | MB          | DRAWING NO.                                                                                                                                                                                                                                                         | REV. A       |
| MFG. APPR.  | DD          | D4965                                                                                                                                                                                                                                                               | SHEET 1 OF 2 |
| APPROVED    | MP          | TITLE                                                                                                                                                                                                                                                               | SCALE        |
| DE APPR.    | DS          | STEP SPACER                                                                                                                                                                                                                                                         | NTS          |
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2014-01-07

8 7 6 5 4 3 2 1

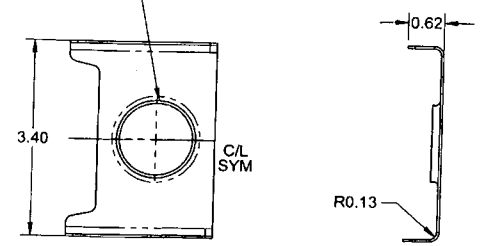
8 7 6 5 4 3 2 1

GRAIN  
DIRECTION



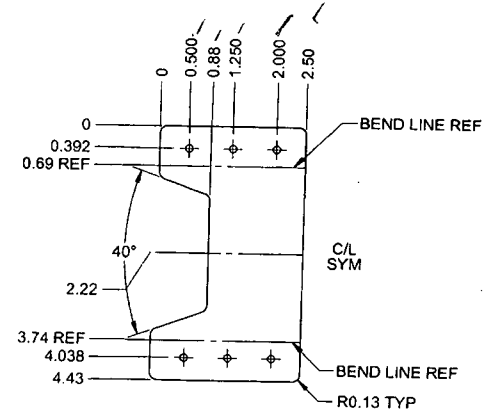
**D4965-5F FLAT PATTERN**

FLANGE AFTER BENDING  
TOWARDS INSIDE OF PART  
USING DT8174

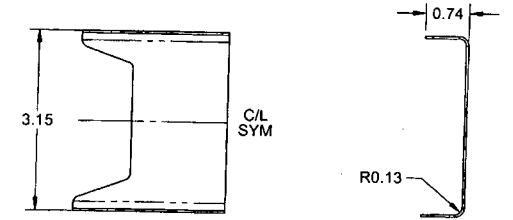


**D4965-5 STEP SPACER**

GRAIN  
DIRECTION



**D4965-7F FLAT PATTERN**



**D4965-7 STEP SPACER**

- NOTES:**
- 1) MATERIAL: D4965-5: MAKE FROM D4965-5F  
D4965-7: MAKE FROM D4965-7F  
D4965-5F/7F: 2024-T3 ALUMINIUM SHEET 0.040" THICK  
PER QQ-A-250/4 OR AMS-QQ-A-250/4 OR AMS 4037 OR ASTM B209  
REF DART SPEC M2024T3S.040
  - 2) FINISH: D4965-5/-7: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
  - 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
  - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
  - 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
  - 6) IDENTIFICATION: NONE
  - 7) WEIGHT: D4965-5/-7: 0.01 lbs
  - 8) ALL NON DIMENSIONED FEATURES CONTROLLED BY CAD FILE "D4965-5F\_REV A.DXF" AND "D4965-7F\_REV A.DXF"

APPROVED

|            |          |                                                                                                                                                                                                                                                                               |              |
|------------|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| DESIGN     | DB       | <b>DART AEROSPACE LTD</b><br>HAWKESBURY, ONTARIO, CANADA                                                                                                                                                                                                                      |              |
| DRAWN      | DB       |                                                                                                                                                                                                                                                                               |              |
| CHECKED    | MB       | DRAWING NO.                                                                                                                                                                                                                                                                   | REV. A       |
| MFG. APPR. | DD       | <b>D4965</b>                                                                                                                                                                                                                                                                  | SHEET 2 OF 2 |
| APPROVED   | MP       | TITLE                                                                                                                                                                                                                                                                         | SCALE        |
| DE APPR.   | DS       | <b>STEP SPACER</b>                                                                                                                                                                                                                                                            | NTS          |
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2014-01-07

8 7 6 5 4 3 2 1